

What Is Claimed Is:

1 1. A method of configuring a segment identifier in a device, said segment
2 identifier identifying a segment of a virtual circuit, wherein said virtual circuit is
3 provisioned on a network, said device being connected to said network, said method
4 being performed in said device, said method comprising:

5 sending a loopback packet on said network, said loop back packet containing a
6 possible segment identifier in a header;

7 determining that said possible segment identifier is an accurate segment identifier
8 if said loopback packet is received by said device from said network; and

9 configuring said possible segment identifier in said device such that said possible
10 segment identifier is provided for construction of headers while transmitting data from
11 said device.

1 2. The method of claim 1, wherein said configuring comprises storing said
2 possible segment identifier in a memory which provides said segment identifier
3 when transmitting said data from said device.

1 3. The method of claim 2, wherein said loopback packet comprises an
2 asynchronous transfer mode (ATM) cell and said segment identifier comprises a
3 VPI/VCI.

1 4. The method of claim 3, wherein said ATM cell comprises an operation and
2 maintenance (OAM) cell.

1 5. The method of claim 4, wherein said device comprises a customer premise
2 equipment, and wherein said another device comprises an edge router, and wherein said
3 OAM cell is either a segment loopback cell or an end-to-end loopback cell.

1 6. The method of claim 5, further comprising:
2 receiving another packet from a user system;
3 segmenting said another packet into a plurality of payloads;
4 encapsulating said plurality of payloads into a corresponding plurality of ATM
5 cells using a header containing said possible segment identifier stored in said memory;
6 and
7 transmitting said plurality of ATM cells on said virtual circuit.

1 7. The method of claim 6, wherein said another packet comprises an Internet
2 Protocol packet.

1 8. An apparatus for configuring a segment identifier of a virtual circuit in a device,
2 said device being connected to a network, said apparatus comprising:
3 a memory designed to provide said segment identifier for transmitting data from
4 said device;
5 a loopback generator generating a loopback packet using a possible segment
6 identifier in a header of said loopback packet;
7 a port interface coupled to said network, said port interface for sending said

8 loopback packet on said network, said port interface receiving another packet from said
9 network;

10 a parser coupled to said port interface, said parser examining said another packet
11 to determine whether said another packet is received in response to said sending said
12 loopback packet; and

13 a configuration block storing said possible segment identifier as said segment
14 identifier in said memory if said another packet is determined to be received in response
15 to sending said loopback packet.

1 9. The apparatus of claim 8, wherein said loopback packet comprises a loop back
2 cell.

1 10. The apparatus of claim 9, wherein said loopback cell comprises an OAM cell.

1 11. The apparatus of claim 9, further comprising:

2 a payload generation block, said payload generation block receiving a data packet
3 from a user system, said payload generation block segmenting said data packet into a
4 plurality of payloads; and

5 an encapsulation block coupled to said payload generation block and said memory,
6 said encapsulation block encapsulating said plurality of payloads into a corresponding
7 plurality of ATM cells, each of said plurality of ATM cells using a header, said header
8 containing said possible segment identifier; wherein said port interface transmits said
9 plurality of ATM cells on said virtual circuit.

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1 12. An apparatus for configuring a segment identifier of a virtual circuit in a
2 device, said device being connected to a network, said apparatus comprising:

3 means for sending a loopback packet on said network, said loopback packet
4 containing a possible segment identifier in a header;

5 means for determining that said possible segment identifier is an accurate segment
6 identifier if said loopback packet is received by said device from said network; and

7 means for configuring said possible segment identifier in said device such that said
8 possible segment identifier is provided for construction of headers while transmitting data
9 from said device.

1 13. The apparatus of claim 12, wherein said means for configuring stores said
2 possible segment identifier in a memory which provides said segment identifier
3 when transmitting said data from said device.

1 14. The apparatus of claim 13, wherein said loopback packet comprises an
2 asynchronous transfer mode (ATM) cell and said segment identifier comprises a
3 VPI/VCI.

1 15. The apparatus of claim 14, wherein said loop back cell comprises an operation
2 and maintenance (OAM) cell.

1 16. The apparatus of claim 15, further comprising:

2 means receiving another packet from a user system;
3 means for segmenting said another packet into a plurality of payloads;
4 means for encapsulating said plurality of payloads into a corresponding plurality
5 of ATM cells using a header containing said possible segment identifier stored in said
6 memory; and
7 means transmitting said plurality of ATM cells on said virtual circuit.

1 17. A computer readable medium carrying one or more sequences of instructions
2 for causing configuration of device with a segment identifier, said segment identifier
3 identifying a segment of a virtual circuit, wherein said virtual circuit is provisioned on a
4 network and said device is connected to said network, wherein execution of said one or
5 more sequences of instructions by one or more processors contained in said device causes
6 said one or more processors to perform the actions of:

7 sending a loopback packet on said network, said loopback packet containing a
8 possible segment identifier in a header;

9 determining that said possible segment identifier is an accurate segment identifier
10 if said loopback packet is received by said device from said network; and

11 configuring said possible segment identifier in said device such that said possible
12 segment identifier is provided for construction of headers while transmitting data from
13 said device.

1 18. The computer readable medium of claim 17, wherein said configuring
2 comprises storing said possible segment identifier in a memory which provides said

3 segment identifier when transmitting said data from said device.

1 19. The computer readable medium of claim 18, wherein said cell comprises an
2 asynchronous transfer mode (ATM) cell and said segment identifier comprises a
3 VPI/VCI.

1 20. The computer readable medium of claim 18, wherein said loop back cell
2 comprises an operation and maintenance (OAM) cell.

1 21. The computer readable medium of claim 20, further comprising:
2 receiving another packet from a user system;
3 segmenting said another packet into a plurality of payloads;
4 encapsulating said plurality of payloads into a corresponding plurality of ATM
5 cells using a header containing said possible segment identifier stored in said memory;
6 and
7 transmitting said plurality of ATM cells on said virtual circuit.

1 22. The computer readable medium of claim 21, wherein said OAM cell
2 comprises either a segment loopback cell or an end-to-end loopback cell.